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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 10/042,229 | 01/11/2002 | Shuichi Furuya | 087147-0468 | 5252 |

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FOLEY AND LARDNER
SUITE 500
3000 K STREET NW
WASHINGTON, DC 20007

EXAMINER

BALASUBRAMANIAN, VENKATARAMAN

| ART UNIT | PAPER NUMBER |
|----------|--------------|
|----------|--------------|

1624

DATE MAILED: 05/16/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | | |
|------------------------------|------------------------------|---------------|--|
| Office Action Summary | Application N . | Applicant(s) | |
| | 10/042,229 | FURUYA ET AL. | |
| | Examiner | Art Unit | |
| | Venkataraman Balasubramanian | 1624 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 February 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2,4,6-22,30,38 and 40-44 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2,4,6-13,16-22 and 30 is/are rejected.
- 7) ☒ Claim(s) 14,15,38 and 40-44 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) <u>3</u> . | 6) <input type="checkbox"/> Other: _____ |

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DETAILED ACTION

Election/Restrictions

Applicant's election with traverse of Group I, claims 1-22, 30, 38 and 40-44 in Paper No. 5 is acknowledged. Applicants' response, which included amendment to claim 1 and cancellation of claims 3 and 5, is also made of record.

Claims 1-2, 4, 6-22, 30, 38, and 40-44 will be examined to the extent they embrace the elected subject matter. Note claim 22 has nonelected subject matter.

The traversal is on the ground(s) that there is no serious search burden to search all Groups I-V. This is not found persuasive because reasons of record. The following apply to applicants' traversal.

Applicants' argument that there is no serious search burden to examine all said groups is totally incorrect. First of all, Invention I-V are independent and distinct from each other because they are directed to structurally dissimilar compounds that lack common core namely bicyclopymidine versus pyrrolpyridine versus imidazopyridine versus bicyclopymidine versus bicyclopymidine as noted in the previous office action. Consequently, the groups have different classifications and require separate prior art searches. It is mandatory for the examiner to search all classes and subclasses. Contrary to applicants' urging it would not be possible with the limited fixed time available for the examiner to examine each case with thorough search. Searching all possible classes and subclasses embraced by the generic definition of A, B, D would of serious search burden.

Examiner also noted in the previous office action "Should applicant traverse on the ground that the bicyclopyrimidine, pyrrolpyridine, imidazopyridine, bicyclopyridine, and bicyclopyrrolidine species are not patentably distinct, applicant should submit evidence or identify such evidence now of record showing the species to be obvious variants or clearly admit on the record that this is the case. In either instance, if the examiner finds one of the inventions unpatentable over the prior art, the evidence or admission may be used in a rejection under 35 U.S.C. 103(a) of the other invention". Applicants have not asserted that the two groups are not distinct.

The requirement is still deemed proper and is therefore made FINAL.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 4 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The dependent claim 4 recites B is a nitrogen atom but as recited in claim 1 B is already a nitrogen atom. Hence B is not a variable group. An appropriate correction is needed.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and

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the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1,2, 4, 6-13, and 16-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ikesu et al US 5,208,141.

Ikesu et al. teach several 5,6-fused heterocyclic compounds, which include compounds claimed herein, for the use as color photographic light -sensitive material. See formula I on col.1 and note the definition of R1, R2, R3, R4, R5, R6, Xa, Xb, Xc, and Y. Also see formulae shown col. 4-6. See the list of compounds shown on col 7-62. Note Ikesu et al. teach the process of making these compounds on col.63-65.

Claims 1, 2, 4, 6-13, and 16-22 require that D of the five-membered ring bearing bicyclopymidine to be a carbon. But Ikesu et al. exemplifies only compounds bearing a ring nitrogen in the five-membered ring of the bicyclopymidine compound.

However, Ikesu et al. teach the equivalency of said nitrogen bearing five-membered ring with those not having nitrogen in the ring in the definition of Xa, Xb, Xc, as seen in col 1-2. Also Ikesu et al teaches Y as hydrogen or a substituent.

Thus one having ordinary skill in the art at the time of the invention was made would have been motivated to make variously substituted bicyclopymidinone compounds as permitted by the reference and expect resulting compounds to possess the uses taught by the art in view of the equivalency teaching outline above. Note all disclosures of the prior art including the unpreferred embodiments must also be considered in determining obviousness. See *In re Bruckel*, 201 USPQ 67.

Claims 1,2, 4, 6-9,17-22 and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Abdalla et al. J. Heterocyclic Chemistry 24(2), 297-301, 1987.

Abdalla et al. teaches several 8-cyano-1,4-dihydro-4-oxopyrrolo[1,2-a]pyrimidine-3-carboxylic acids useful as antimicrobial agents. See entire document especially page 297 for synthetic scheme, page 298 for compounds made.

Instant claims recite D as carbon atom and specification shows no compounds with substituted carbon. Hence, D is therefore interpreted as CH or CH₂ group.

While said compound doesn't anticipate the scope of instant claims, they are very closely related, being positional isomers of compound of formula I. Note the when D =CH and R⁴ =CN, the instant compound is an positional isomer of compound XVII

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wherein the 6-position has hydrogen and 8-position a CN group i.e. 6-cyano of instant compound is a positional isomer of 8-cyano of the reference. However, positional isomers are not deemed patentably distinct absent evidence of superior or unexpected properties. See *In re Crounse*, 150 USPQ 554; *In re Norris* 84 USPQ 458; *In re Finely* 81 USPQ 383 and 387; *Ex parte Engelhardt*, 208 USPQ 343; *Ex parte Henkel*, 130 USPQ 474, regarding positional isomers.

Thus it would have been obvious to one skilled in the art at the time of the invention was made to expect instant compounds to possess the utility taught by the applied art in view of the close structural similarity outlined above.

References cited in the Information Disclosure Statement (paper # 3) are made of record.

Allowable Subject Matter

Claims 14-15, 38, 40-44 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Said claims would be allowed since specific species or the method of use embraced in these claims are not taught or suggested by the art of record or from a search in the relevant art area.

Conclusion

Any inquiry concerning this communication from the examiner should be addressed to Venkataraman Balasubramanian (Bala) whose telephone number is (703) 305-1674. The examiner can normally be reached on Monday through Thursday from

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8.00 AM to 6.00 PM. The Supervisory Patent Examiner (SPE) of the art unit 1624 is Mukund Shah whose telephone number is (703) 308-4716.

The fax phone number for the organization where this application or proceeding is assigned (703) 308-4556.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-1235.

V. Balasubramanian
Venkataraman Balasubramanian

5/14/2003